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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/303,587	05/03/1999	MIKA VILJANMAA	990.119CON	8567

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EXAMINER	
HUYNH, LOUIS K	
ART UNIT	**PAPER NUMBER**
3721	

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/303,587	VILJANMAA ET AL.
	Examiner	Art Unit
	Louis K. Huynh	3721

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-6,8-13,15 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6,8-13,15 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 May 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/27/2005 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2, 4-6, 8-13, 15 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite for lacking the structural relationship between the step of assigning and the step of adjusting, and the functional relationship between the variable representing a physical property affecting the bending of each of the at least two intermediate rolls and the first force, the second force, the support forces and/or the weight forces.

Claim 1, lines 18-21: "adjusting ... weight forces ... intermediated rolls" renders the claim indefinite because the weight force of each of the rolls is a constant and thus cannot be adjusted.

Claim 11 is indefinite for lacking the structural relationship between the assigning function and the adjusting function of the automation system, and the functional relationship

between the variable representing a physical property affecting the bending of each of the at least two intermediate rolls and the first force, the second force, the support forces and/or the weight forces.

Claim 11, lines 19-22: "for adjusting ... weight forces ... intermediated rolls" renders the claim indefinite because the weight force of each of the rolls is a constant and thus cannot be adjusted.

Response to Arguments

4. Applicant's arguments filed 01/27/2005 have been fully considered but they are not persuasive.

Applicant contends that the teaching of Koivukunnas cannot be combined with the teaching of Schiel to render the claimed invention obvious because the reference to Koivukunnas (US 5,438,926) does not teach or suggest assigning a value to each of the at least two intermediate rolls or an automation system and a computing unit for assigning at least one value to a variable representing a physical property affecting the bending of each of the two intermediate rolls; and the reference to Schiel (US 5,226,357) does not disclose a variable-crown upper roll that applies a first force to the at least two intermediate rolls, or disclose adjusting at least one of the first force, the second force, at least one of the support forces and at least one of the weight forces exerted on each of the at least two intermediate rolls to place the set of rolls in a state of equilibrium and a predetermined state of deflection.

This is not found persuasive because on the one hand, the reference to Koivukunnas teaches a method and apparatus for calendaring paper wherein the nip loads produced by the masses of the intermediate rolls are substantially relieved and the nips are arranged so that they

can be adjustably loaded by means of a load produced by a variable-crown upper or lower roll and/or by means of an external load applied to the upper or lower roll, wherein the support forces and the nip loads are regulated during operation (summary of the invention); and on the other hand, the reference to Schiel teaches a method and apparatus for calendaring paper wherein an automation system including force controlling elements (31, 41, 51) and a computer with a complex system of formulas are utilized to adjusting the forces produced by force elements (31, 41, 51) in order to regulate the linear forces applied to the intermediate rolls. It is known that complex formulas in the computer must have actual physical property values of each of the rolls input as a data set before they can perform any calculations in order to adjust the external loads to place the calender in a proper predetermined operation mode; hence the step of assigning. Therefore, it would have been obvious to a person with an ordinary skill in the art, at the time the invention was made, to have combined the teaching of Koivukunnas with the teaching of Schiel so that the adjusting of the forces in the method of Koivukunnas could be performed correctly and efficiently since it is impossible to perform such task manually during operation of the calender.

A prima-facie of obviousness has been reasonably set forth and the rejection set forth in the last Office Action is maintained and repeated as follows:

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 2, 4-6, 8-13, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koivukunnas et al. (US 5,438,920) in view of Schiel (US 5,226,357).

With respect to claims 1 and 11, Koivukunnas discloses a method and a calender for calendering a paper web; the calender having a set of rolls including an upper variable-crown roll (13), a lower variable-crown roll (14), a plurality of intermediate rolls (15-22), and a plurality of support cylinders (154-224) for exerting support forces to the intermediated rolls; wherein the paper web is calendered between nips (N_1-N_9) formed between the rolls such that the rolls have bending lines curved downward; wherein the upper variable-crown roll (13) applies a first force to the intermediate rolls, the lower variable-crown (14) applies a second forces to the intermediate rolls, and the support cylinders apply support forces to the intermediate rolls; wherein the linear load profile in the nips are kept substantially uniform to place the set of rolls in an equilibrium state during operation (column 11, line 34-36); and wherein the weight of the each intermediate roll and the weight of auxiliary equipment attached to the respective intermediate roll are compensated for by the respective support cylinders (154-224) to place the intermediated rolls in a predetermined state of deflection. The method and calender of Koivukunnas meet all of applicant's claimed subject matter but lacks the specific teaching of an automation system for assigning at least one value to a variable representing a physical property of affecting the bending of one of the intermediate rolls and for adjusting at least one of the first force, the second force, the support forces and the weight forces in order to place the set of rolls in a state of equilibrium and a predetermined state of deflection.

However, Schiel discloses a paper calender and a method of calendering wherein a control computer (7) is programmed in accordance with a complex system of formulas of the

multi-roll calender (1), which formulas associate the values of the weight forces, the linear loads resulting therefrom and the sag-free linear forces; the computer also determines the internal pressure of the sag-compensation roll (2) (column 3, line 31-37) by taking into account the known physical properties such as weights forces as well as the inherent stiffness of all rolls (column 2, lines 32-52) so that the support forces can be adjusted to have a relatively large control range of the linear forces in the calender nips (column 2, line 6-10).

Therefore, it would have been obvious to a person with an ordinary skill in the art, at the time the invention was made, to have modified the method and calender of Koivukunnas by having provided a computer programmed in accordance with a complex system of formulas of the multi-roll calender, as taught by Schiel, for determining the internal pressure of the rolls by taking into account (assigning) the known physical properties such as weight forces of the rolls as well as the inherent stiffness of the intermediate rolls so that the support forces can be adjusted to have a relatively large control range of the linear forces in the calender nips.

With respect to claims 2, 4 and 15, it is known that weight force is derived from the mass, and mass is a property of a specific roll in the calender that must be assigned into the computer as a value. Similarly, other values such as bending rigidity, shape and/or material of each of the rolls must be assigned into the computer so that the computer can utilized these assigned values in the complex system of formulas.

With respect to claims 5 and 12, it is well known in the art of calendaring paper that intermediate rolls are either hard rolls or soft rolls and their bending rigidities are different from one another, hence different deflection properties.

With respect to claims 6 and 13, since the web is calendered between each and every nips formed by two adjacent rolls, the set of rolls in the modified calender of Koivukunnas must be treated as a unit when adjusting anyone of the forces so that the linear load profile in the nips are substantially uniform.

With respect to claims 9, 10 and 18, the method of Koivukunnas further includes adjusting the forces in the set of rolls from nip to nip as illustrated in Figures 1A, 1B and 1C for different quality of the treated paper web (column 4, lines 19-37).

Conclusion

7. This is a Request for Continuation Examination of applicant's earlier Application No. 09/303,587. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

8. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louis K. Huynh whose telephone number is (571) 272-4462. The examiner can normally be reached on M-F from 9:30AM to 5:00PM.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi I. Rada can be reached on (571) 272-4467. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Louis K. Huynh
PRIMARY EXAMINER
Art Unit 3721

March 28, 2005